

REMARKS

Claims 1-6 are pending. No new matter has been presented.

Claims 1-5 stand rejected under 35 USC 102(e) as benign anticipated by Ogata, U.S. Patent No. 6,614,720. Applicant respectfully traverses this rejection.

Applicant has amended claim 1 to more clearly recite the respective orientation of the virtual line recited therein. Amended claim 1 recites an optical pick-up apparatus that records information in an optical recording medium and/or reproduces information from the optical recording medium by means of light “while moving in a predetermined direction which is perpendicular to a rotation axis of the optical recording medium, comprising: ... a diffraction grating for diffracting light emitted from the light source, *the diffraction grating being formed line-symmetrically with respect to a virtual line perpendicular to the predetermined direction and perpendicular to the light emitted from the light source*, and divided into a plurality of diffraction regions formed in such a manner that each has an inclination angle with respect to the virtual line and grating cycles of adjacent diffraction regions have a phase difference of 180 degrees with each other.” Ogata does not disclose or suggest such features.

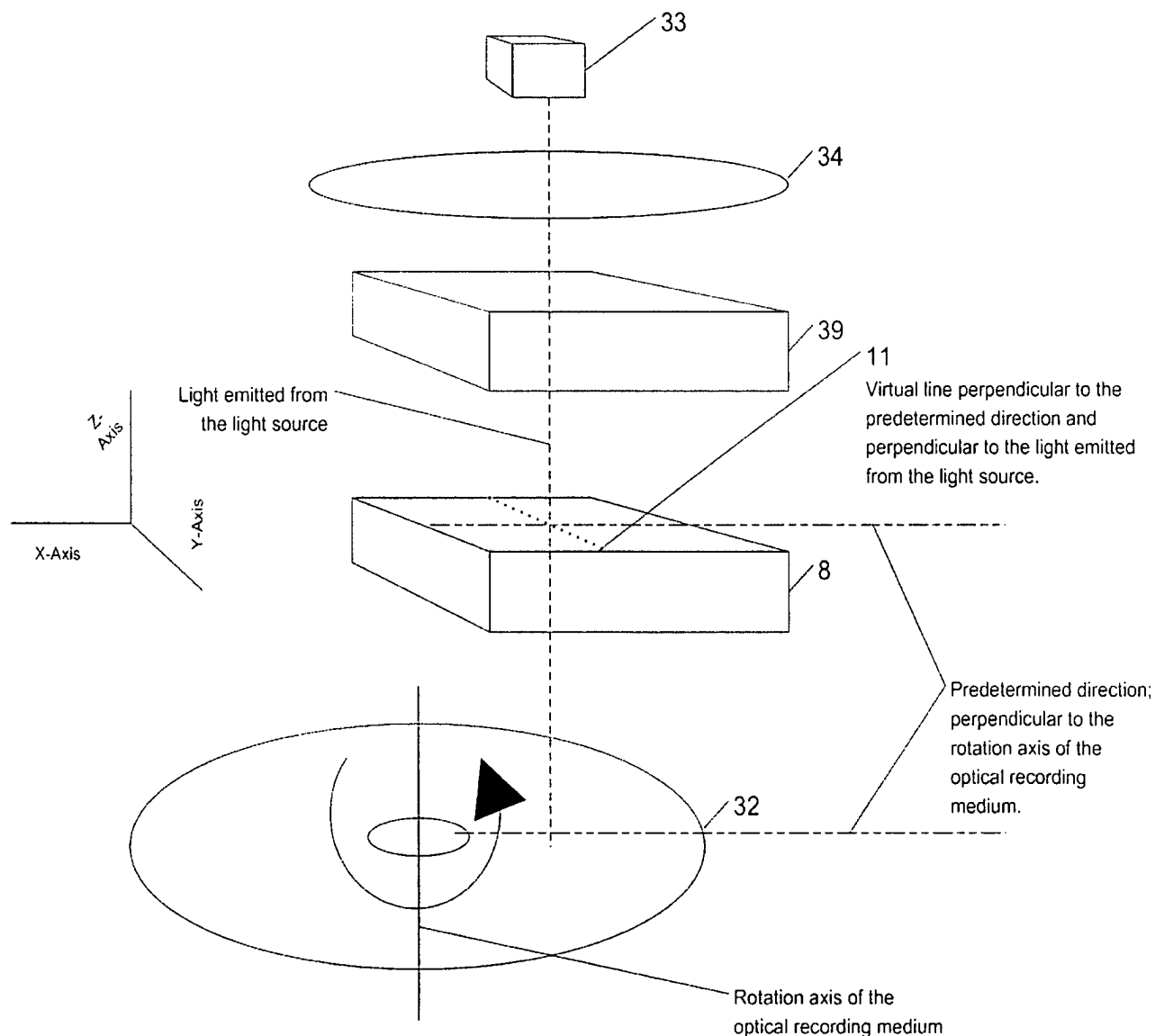
Applicant has chosen to provide the below diagram to assist the Examiner in visualizing the orientation of the virtual line recited in claim 1. This diagram is a three dimensional representation of applicant’s figure 1 and does not add any new matter. Applicant has chosen to omit many of the structural features of claim 1 and figure 1 in order to simplify the diagram. Accordingly, this diagram is not intended to show the entirety of the device of claim 1.

The diagram depicts the light source 33, which emits a beam of light (dashed line) through the collimator lens 34 and into the diffraction element 31, which includes a substrate 39 and a diffraction grating 8, and eventually onto the optical recording medium 32.

As depicted, the light source emits light along the z-axis (vertical with respect to the page). The axis of rotation for the optical recording medium is also shown to be along the z-axis. The

optical pick-up apparatus is configured to move in “a predetermined direction which is perpendicular to a rotation axis of the optical recording medium.” This predetermined direction is shown along the x-axis (depicted by the dash-dot-dot lines).

The diffraction grating is then “formed line-symmetrically with respect to a virtual line.” The virtual line 11, is shown along the y-axis, which is “perpendicular to the predetermined direction [x-axis] and perpendicular to the light emitted from the light source [z-axis],” as recited in claim 1.



Once the orientation of the virtual line 11 is clear with respect to the movement of the optical pick-up apparatus and the direction of emitted light, figure 2 clearly shows how diffraction regions 12 may be "formed in such a manner that each has an inclination angle with respect to the virtual line and grating cycles of adjacent diffraction regions have a phase difference of 180 degrees with each other," as recited in claim 1.

Ogata does not disclose or suggest the above discussed features of claim 1. In light of the above, applicant respectfully submits that the Examiner's previous interpretation of the orientation of the virtual line is not consistent with claim 1. Specifically, the Examiner's assertion that the claimed virtual line corresponds with the x-axis of Ogata's figure 1 is in direct contrast to applicant's amended claim 1. Once it is clear that the virtual line cannot correspond with the x-axis of Ogata, the remainder of the Examiner's assertions with respect to the diffraction regions becomes moot.

Furthermore, Figs. 2B and 10B of Ogata show a single diffraction grating 20. Ogata does not disclose any additional information regarding the lines drawn within the diffraction grating 20 in Figs. 2B and 10B. Since there is no associated disclosure in Ogata, it is quite reasonable for a person skilled in the art to understand that Figs. 2B and 10B of Ogata show the diffraction gratings 20 while segmenting them into small sections each corresponding to a grating cycle. In a usual single diffraction grating, phase difference that corresponds to one cycle is 360 degrees. Hence, a person skilled in the art would have interpreted Ogata as disclosing a phase difference of 360 degrees, not 180 degrees as recited in claim 1.

Consequently, the Examiner's assertion that "a phase difference of 180 degrees between grating cycles of adjacent regions is understood" based on Ogata is unsupported by the disclosure thereof.

Accordingly, claim 1 is allowable.

Claims 2-5 are allowable at least due to their respective dependencies. Applicant requests that this rejection be withdrawn.

Claim 6 stands rejected under 35 USC 102(b) as being anticipated by Nomura, U.S. Patent No. 6,342,976. This rejection is respectfully traversed.

Applicant has amended claim 6 to recite features substantially similar to those of claim 1. Similar to Ogata, once the orientation of the virtual line is made clear, the Examiner's assertions with regard to the additional features of the diffraction regions become moot.

Additionally, similarly to Ogata, Fig. 2 of Nomura shows a single diffraction grating 12. Nomura does not disclose additional information regarding the lines drawn within the diffraction grating 12 in Figs. 2.

Once again, a person of ordinary skill in the art would have understood Fig. 2 of Nomura as depicting the diffraction grating 12 segmented into small sections each corresponding to a grating cycle. In a usual single diffraction grating, the phase difference that corresponds to one cycle is 360 degrees. Hence, a Nomura discloses a phase difference of 360 degrees, instead of 180 degrees as recited in claim 6.

Accordingly, claim 6 is also allowable.

Applicant solicits an early action allowing the claims.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, applicant petitions for any required relief, including extensions of time, and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing Docket No. **275412002000**.

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Respectfully submitted,

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